

KSR-1000

KENWOOD

INSTRUCTION MANUAL

For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.

Model _____ Serial Number _____

Unpacking

Unpack the unit carefully and make sure that all accessories are put aside so they will not be lost.

Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.




Before applying power**Important!****U.S.A.**

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only.

Features

- Block Down Conversion Design from 950 MHz to 1450 MHz has made the multiple receiver system possible.
- All the Multiplex and Discrete Matrix stereo mode can be received.
- For the 14 transponders with which programs are in stereo, the internal memory automatically sets the audio subcarrier frequency, IF band and stereo mode.
- A preset memory is provided which is re-writable for the automatic stereo reception setting of 12 other transponders.
- The unit can be connected to either a mechanical type or electronic type polarizer, as vertical/horizontal polarization is selected automatically.
- SKEW adjustment is possible and the last adjustment for each of 16 satellites is automatically memorized.
- Reception of the required 2 stations can be locked (PARENTAL LOCK system).
- The Dolby NR* system is built into the unit.
- Infrared remote controller is supplied.
- When the unit is used in combination with the optional satellite antenna positioner KSP-1000, the antenna can also be remotely controlled.
- With the power off, the groundwave VHF antenna and the TV RF OUT terminal of the unit are directly connected (POWER OFF THROUGH system).

Safety precautions

	CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
	The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

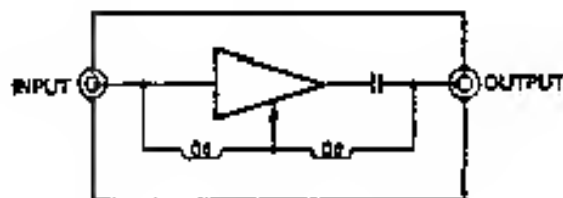
* DOLBY and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.

Configuration for reception of Satellite Television

The satellite transmits a maximum of 24 channels of satellite television at frequencies between 3.7 and 4.2 GHz. With the Multiple Receiver System (MRS), the 3.7 to 4.2 GHz frequencies are converted into 950 to 1450 MHz using the LNB (Low Noise Block Converter), and received via a coaxial cable. As signals for 24 CH are comprised in the 950 to 1450 MHz band, several different channels can be monitored when multiple tuners are connected. Component parts for this MSR are also prepared by KENWOOD.

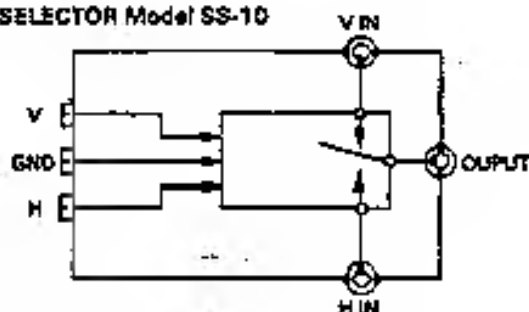
KENWOOD Multiple Receiver System parts

LINE AMPLIFIER Model SL-10



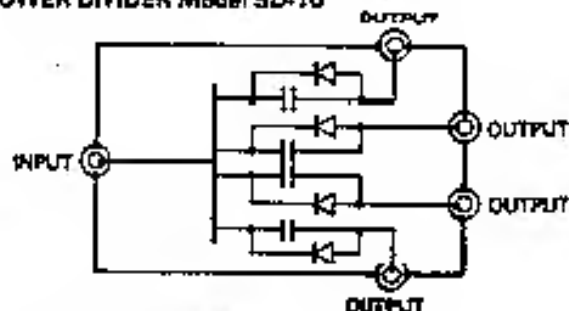
Operating Frequency	: 950 ~ 1450 MHz
Gain	: 20 dB \pm 3 dB
Noise Figure	: 6 dB max
Output Level (IM 50 dB)	: -10 dBm max.
Power Requirements	: DC 15 ~ 21.2V 60 mA max
DC Operation	: DC through
Packaging	: waterproof type

V/H SELECTOR Model SS-10



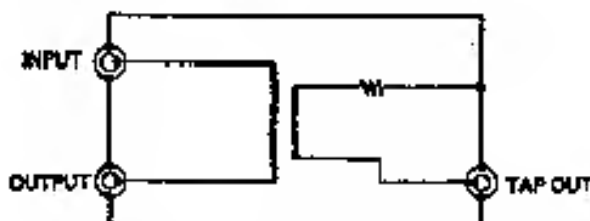
Operating Frequency	: 950 ~ 1450 MHz
Insertion Loss	: 4 dB
Isolation	: 30 dB
Switching voltage	: +8V 30 mA max
DC operation	: DC through
Packaging	: indoor use type

POWER DIVIDER Model SD-10



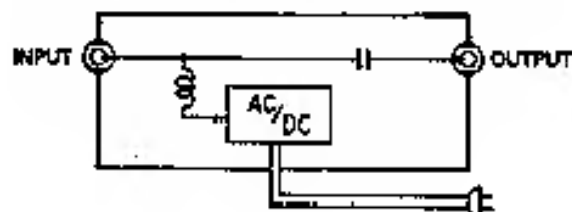
Operating Frequency	: 950 ~ 1450 MHz
Insertion Loss	: 7 dB
Isolation	: 20 dB
Dividing	: 2 ~ 4 way
DC operation	: One way DC through (OUTPUT - INPUT)
Packaging	: indoor use type

MULTI TAP Model ST-10



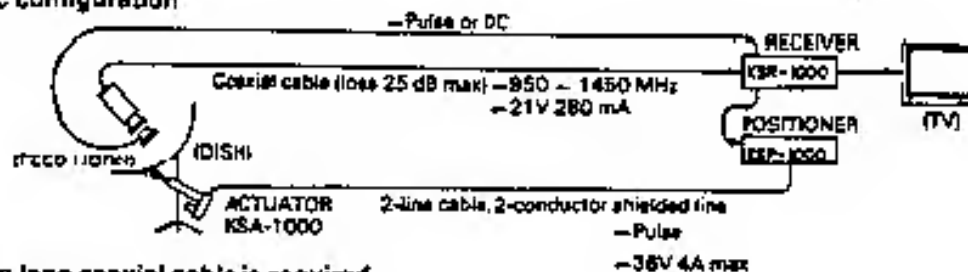
Operating Frequency	: 950 ~ 1450 MHz
Insertion Loss	: 1.5 dB
Tap Loss	: 10 dB
Isolation	: 20 dB
DC operation	: 1 M Ω OUT - DC through TAP OUT - DC out
Packaging	: indoor use type

DC POWER INJECTOR Model SI-10

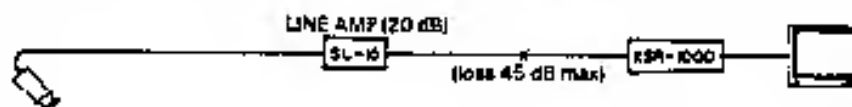


Operating Frequency	: 950 ~ 1450 MHz
Insertion Loss	: 0.5 dB
Inject power	: DC 21V 600 mA max
AC INPUT	: 120V 60 Hz
DC operation	: OUTPUT - DC out
Packaging	: indoor use type

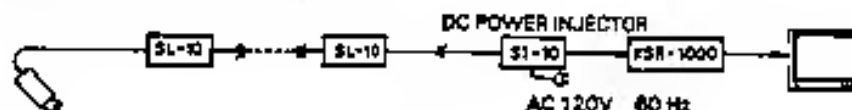
1. Basic configuration



2. When long coaxial cable is required



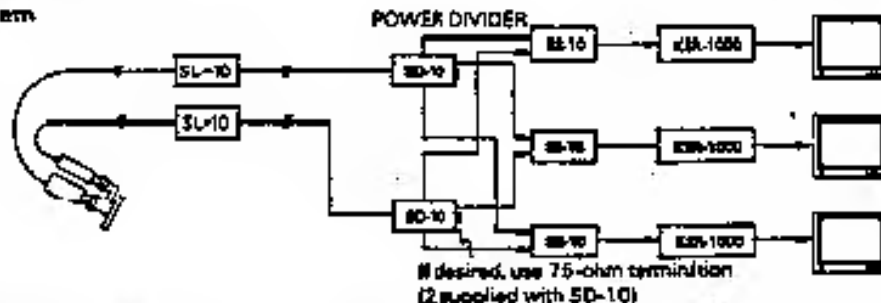
3. When the coaxial cable needs to be very long



4. Dual Feed Horn system (LNB exclusively for Vertical/Horizontal)



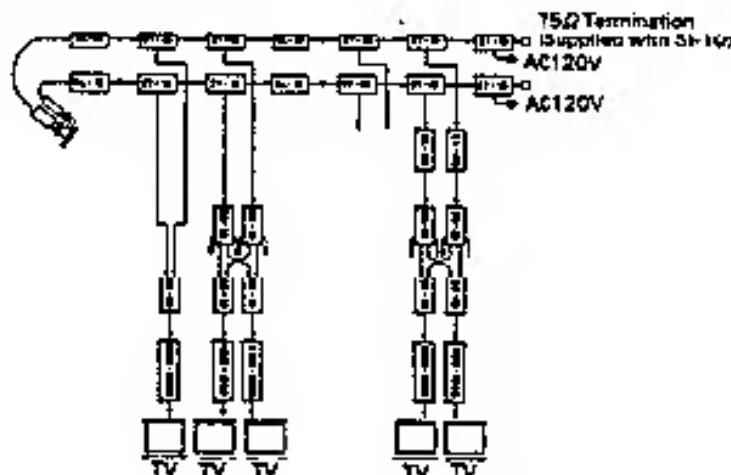
5. MRS systems



Note:

Power for the LNB and line amp is supplied from the FSR-1000 which has the highest voltage of

6. Large-scale MRS system



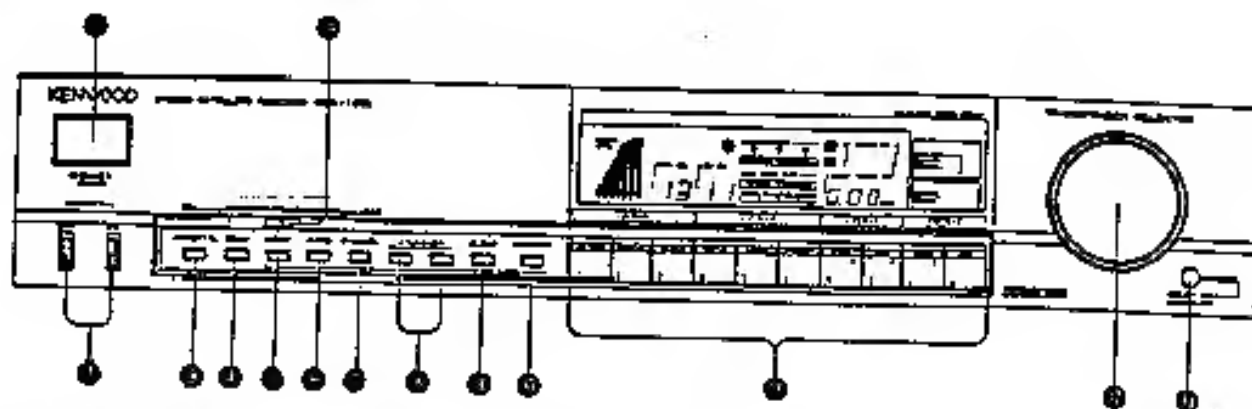


Fig. 1

● **POWER ON/OFF key**

The unit built-in POWER OFF THROUGH system directly connects the VHF antenna and the TV RF OUT terminal with the power OFF, which enables reception of groundwave program.

● **SKEW keys**

For the mechanical polarizer, fine adjustment of the polarizer's angle against the plane of polarization is possible. Fine adjustment of 10 satellites specified in Table 4 is memorized every time the adjustment is performed.

● **PARENTAL LOCK key**

- Locks the optional KSP-1000 so that children cannot play with the antenna.
- Extinguishes the pictures and mutes the sounds of up to 2 transponders so that adult programs cannot be viewed or heard by children.

When the key is pressed in preset transponder mode, the "P" indicator flashes to indicate that the preset transponder is extinguished in picture and is muted in sound until the lock is released by the required code No. When the key is pressed, the "P" indicator in the display lights to indicate that antenna movement is locked.

● **SCAN key**

When the key is pressed, the transponder is scanned in the higher direction at high speed (approx. 1.5 sec/24 transponders). With this scanning, the best position of the antenna can be obtained. When the key is pressed again, scanning stops and the unit returns to normal reception mode.

● **MODE key**

Selects the STEREO mode successively, mono/multiplex (M/MPX) matrix (MTRX), discrete (DISC), according to the stereo system of the station to be received. The selected mode is indicated in the display. M of M/MPX is the abbreviation for MONO; MONO and MPX are selected automatically.

● **BAND (W/N) key**

Selects the audio IF band alternately. The selected IF band (WIDE or NARROW) is indicated in the display.

● **CHANNEL (A/B) key**

Selects the audio channel alternately. With this selection, the selected audio channel (A, B) can be checked observing the display (MTRX: A=L-R, B=L+R, DISC: A=L, B=R).

● **TUNING (←/→) keys**

Select the required audio frequency (5.04 MHz - 8.48 MHz). When the ← key or → key is pressed, the frequency selected is indicated in the display.

● **CLEAR key**

When the key is pressed with the station being currently received, that station is cleared from the memory. However, the stations specified in Table 4 cannot be cleared.

● **MEMORY key**

When the key is pressed, the station being currently received can be memorized. According to the SAT. NO. and the TR. NO. of the station received, MODE (MTRX/DISC), BAND (WIDE/NARROW) and the audio subcarrier frequencies of CHANNEL (A/B) are memorized. However, MPX is selected automatically and, therefore, does not need to be memorized. Up to 12 stations can be memorized.

● **Satellite selection keys**

Selects the required satellite. When the [3] key (SATCOM) and [2] key are pressed in that order, SAT. NO. display shows 13 and SATCOM F3 is selected. With ANIK, press [0], then [2] for B or [4] for D. When the optional Satellite Antenna Positioner KSP-1000 is connected, the satellite selection is transmitted to the satellite antenna positioner, and the positioner automatically moves the antenna to the preset position. The satellite selection is transmitted to the satellite antenna positioner, and the positioner automatically moves the antenna to the preset position.

● **TRANSPONDER control**

Increases or decreases the TR. NO. in the display. Adjust the control so the TR. NO. display shows the required No. between 1 - 24 to receive the required station. When the required station is received, the appropriate polarization for the received satellite is automatically selected.

● **DOLBY-NR ON/OFF switch**

The M.T.V., Movie CH and Disney CH are programmed with the Dolby NR system.

Note:

With Dolby NR-coded programs, deemphasis is specified as 25-microsecond instead of 75-microsecond. Consequently, high ground noise may appear increased when Dolby NR is switched ON. This is normal and not a malfunction.

● **AUDIO OUTPUT LEVEL Control**

Used to adjust the volume level. Refer to ● AUDIO OUT jacks on page 5.

System connections

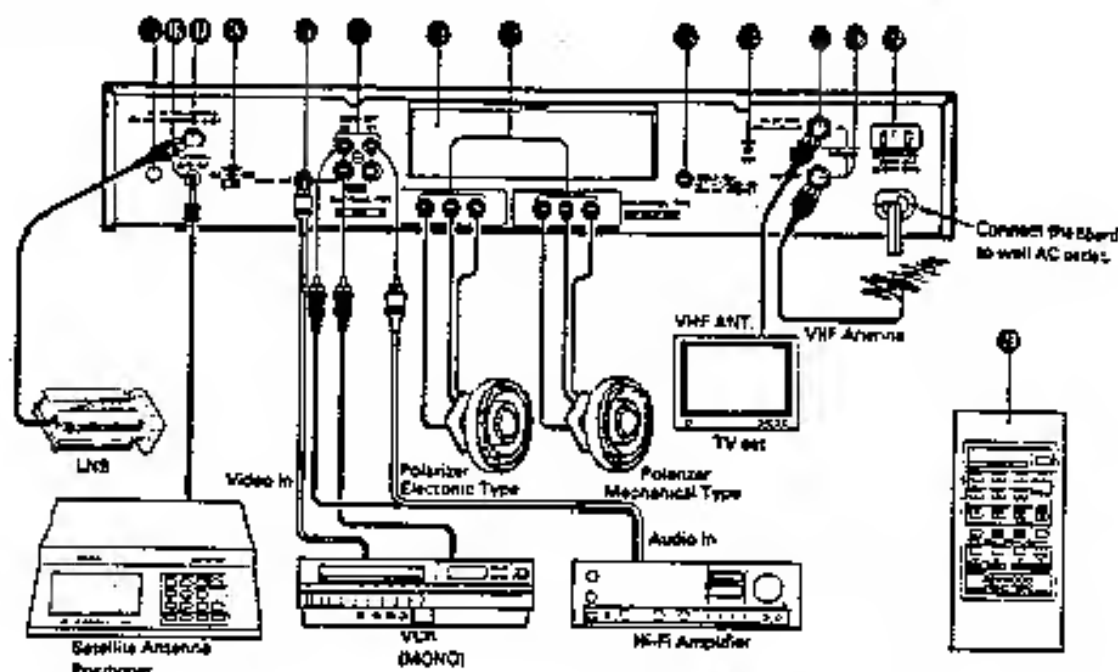


Fig. 2

● S METER ADJ. control

Used to adjust the SIGNAL METER sensitivity. (Refer to "Adjustment" on page 6.)

● ANTENNA DATA OUT jack

Connect this jack to the data output jack of the optional satellite antenna positioner KSP-1000. When the unit is used in combination with KSP-1000, the antenna can be easily moved to the required position.

● IF IN jack

Used to connect to the IF output jack (950 - 1450 MHz) of the low noise block converter with the coaxial cable. This jack also supplies DC 21V to drive the low noise block converter.

● VIDEO INV/NDR selector

Used to reverse the polarization of the video playback signal. Set the selector to the NDR position when the local oscillation to down convert the low noise block converter is upper, and to the INV position when the local oscillation is lower. When the optional low noise block converter LNB-1000 is used, set the selector to the NDR position.

● VIDEO OUT jack

Connect this jack to the video in jack of the VCR with the coaxial cable. When the TV set is equipped with the VIDEO jack, connecting the VIDEO OUT jack of KSR-1000 to the VIDEO jack of the TV set makes it easier to obtain a clearer picture than connecting to TV RF OUT jack.

● AUDIO OUT jacks

Used to connect the unit to a stereo Hi-Fi amplifier, VCR or TV set equipped with audio in jacks. When the equipment to be connected is stereo, connect the [L] and [R] outputs. The volume of these outputs can be controlled by the AUDIO OUTPUT LEVEL control on the front panel.

The [MONO] out jack should be connected to a monaural device. This output level is not affected by the AUDIO OUTPUT LEVEL control setting.

● TUNING BOX

Pull the upper side of the box lid to open the box. When the box is opened, AFC is set to OFF. (Refer to "Adjustment") Be sure to keep the lid closed in normal operation. If it is open, the AFC is switched off and the picture may deteriorate.

● POLARIZER terminals

There are 2 types of polarizers: mechanical and electronic. The unit can be connected to either type. Use the appropriate terminals for the type of polarizer used.

● ANGLE ADJ. control

Used to adjust the right angle of the mechanical type polarizer. (Refer to "Adjustment")

● 3 CH/4 CH selector

Set the selector to the appropriate position according to location.

● TV RF OUT terminal

This RF modulator output terminal should be connected to the VHF antenna terminal of the TV set.

● VHF ANT terminal

Connect this terminal to the VHF antenna. When the unit power is turned off, the VHF ANT terminal and the TV RF OUT terminal are directly connected and the TV ground-wave program can be received (POWER OFF THROUGH system).

● AC OUTLET

Used as an AC outlet for the optional satellite antenna positioner KSP-1000.

● Infrared remote controller

Same as the operation on the front panel, except that the transponder selection uses an up-down key.

Connect the polarizer, LNB, TV set and stereo Hi-Fi amplifier referring to "System connections" on page 5. In combination with the satellite antenna positioner KSP-1000 and with the VHF antenna, you can get the most from the various features of the unit. A VCR can also be connected to the unit. The following are the important points to be noted in system connections.

1. Connecting the LNB

For Multiple Receiver System, the 0.7 - 4.4 GHz signal from the satellite is converted into the IF signal of 950 - 1450 MHz by the LNB or the block-down converter and the converted signal is input to the unit. Therefore, when connecting the unit to the LNB with the coaxial cable, be sure to use good-quality cable whose performance is guaranteed even at high frequencies.

The length of the coaxial cable to be used:

The appropriate length of the cable to be used is specified in Table 1. When the power gain of the LNB is 60 dB, the cable loss should be less than 25 dB (at 1450 MHz). Therefore, if a cable extension is necessary, be sure to use cable whose loss is less than 25 dB or the optional 20 dB line amplifier. The cable's core lead diameter should be $\phi 0.64 - 1.02$ mm. Use of cable whose core lead diameter is more than $\phi 1.02$ mm will damage the F-connector. Use of cable whose core lead diameter is less than $\phi 0.64$ mm will result in poor connection. When the block-down converter is connected, adjust the power gain of the block-down converter so it becomes 15 dB at the power gain of the LNA (Low Noise Amplifier) 50 dB and the loss between the LNA and the block-down converter connection.

Cable type	Length (at LNB 60 dB)
RG-59U	50 m (150 feet)
RG-6U	60 m (180 feet)
RG-59U FOAM	83 m (250 feet)
RG-6U FOAM	100 m (300 feet)

Table 1

2. Connecting the polarizer

Table 2 shows the types of polarizer and an example mounted on the connected to the unit. The unit can be connected to either type of polarizer if it is equipped with output terminals for either type.

Type	Method	Model
Mechanical	Pulse Control	CHARRAL "POLAROTER"
	DC Motor	(Cannot be used)
Electronic	Pin Diode	OMNISPECTRA "POLARIZER"
	Magnetic	(Cannot be used)

Table 2

3. Connecting the satellite antenna positioner

The optional satellite antenna positioner KSP-1000 can preset up to 18 antenna positions. When the unit is used in combination with KSP-1000, pressing the satellite selection keys of the unit or of the infrared remote controller automatically moves the antenna to the preset position. The unit's PARENTAL LOCK system works more effectively in combination with KSP-1000. The optional actuator KSA-1000 is also recommended.

Adjustment

The S METER ADJ. control, ANGLE ADJ. control for the mechanical polarizer and the TUNING BOX are equipped on the unit rear panel.

1. TUNING BOX

Used to tune in to the transponder frequencies specified in Table 3. Pull the upper side of the box lid to open the box and the AFC is set to OFF. Inside the box there are 12 adjustment controls for 24 TR. NOs. When the odd TR. NO. is adjusted, the even TR. NO. is automatically adjusted. The TR. NO. is factory set and does not need to be adjusted. However, if adjustment is needed, be sure to adjust the controls of the odd TR. NO. from the smaller number, i.e. 1, 3, 5, 7, ... to obtain the best picture. When adjustment is finished, be sure to press the center hook of the upper side of the box lid and check the box is securely closed. Pressing a part other than the

center hook may sometimes result in insecure closing of the box and the AFC may remain OFF. This cable is when the frequency of the local oscillator is upper (5.15 GHz).

TR. NO.	Center Frequency (MHz)	IF Center Frequency (MHz)
1	3.720	1.430
2	3.740	1.430
3	3.760	1.380
4	3.780	1.370
5	3.800	1.350
6	3.820	1.330
7	3.840	1.310
8	3.860	1.290
9	3.880	1.270
10	3.900	1.250
11	3.920	1.230
12	3.940	1.210
13	3.960	1.190
14	3.980	1.170
15	4.000	1.150
16	4.020	1.130
17	4.040	1.110
18	4.060	1.090
19	4.080	1.070
20	4.100	1.050
21	4.120	1.030
22	4.140	1.010
23	4.160	990
24	4.180	970

Table 3

2. ANGLE ADJ. control

Horizontal and vertical polarizations of the signal oscillation from the satellite are alternately switched in the same TR. NO. For example, the even TR. NO. of the SATCOM is horizontal and the odd TR. NO. of the SATCOM is vertical. For GALAXY, the even TR. NO. is vertical and the odd TR. NO. horizontal. This is caused by the diagonal difference of the signal oscillation. Therefore, the polarizer probe should be automatically switched according to the vertical/horizontal oscillation of the signal. For a mechanical type polarizer, the probe switching is driven by the motor. The unit's ANGLE ADJ. control precisely sets the range of this motor-driven switching of the probe at 90°. (For an electronic type polarizer, right angle adjustment is not necessary as the probe switching is not driven by the motor.) Right angle adjustment of the mechanical type polarizer should be performed in the following manner (pulse control included):

- Set the antenna position to SATCOM F3, and press satellite selection keys **1** and **2** (key **1** is for SATCOM and key **2** is for F3). Check the SAT. NO. display shows 13.
- Adjust the TRANSPONDER control so the POLARITY display shows H as the even TR. NO. for the SATCOM F3 is horizontal.
- Operate the SKEW keys so that the best picture is obtained. Adjustment with the SKEW keys turns the polarizer probe so that the probe is switched appropriately for horizontal polarization.
- Select the appropriate TR. NO. so the POLARITY display shows V (F3 is odd TR. NO.). Keep one of the satellite selection keys pressed and adjust the ANGLE ADJ. control on the rear panel with a (+) screwdriver. This adjustment is to set the right angle of horizontal polarization against vertical polarization: the probe turns 90° so the probe is set appropriately for the vertical polarization. Be sure to keep the satellite selection key pressed while right angle adjustment is carried out. Otherwise, the SKEW signal is transmitted for only 5 seconds.
- When the electronic type polarizer is used, adjust the antenna position regardless of horizontal or vertical setting so the best picture is obtained.

3. S METER ADJ. control

The unit's SIGNAL LEVEL meters have 7 steps. The meter reading varies according to the gain of the LNB or the loss (i.e., the length) of the coaxial cable. The S METER ADJ. control compensates for SIGNAL LEVEL fluctuation. Adjust the TRANSPONDER control so the TR. NO. display shows 24. Adjust the antenna position so the antenna does not receive a signal. Adjust the S METER ADJ. control with a (+) screwdriver so the SIGNAL LEVEL meters fluctuation caused by noise becomes 1.

Memory function

This unit is microprocessor-controlled and incorporates re-writable RAM (Read and Write Memory) and ROM (Read Only Memory) which provide the following memory functions. The ROM is not re-writable and holds the storage permanently. The RAM holds the storage for about 10 years, backed up by a lithium battery.

(1) With 14 transponders with which programs are in stereo, conditions for stereo programs reception are stored:

ROM preset

(2) Stereo programs reception conditions for 12 more transponders can be additionally stored in memory:

RAM preset

(3) For 16 satellites, the last setting positions of SKEW control are automatically stored in memory:

SKEW memory

(4) Conditions of reception keys immediately before switching power off are automatically stored in memory:

LAST STATE memory

1. ROM preset

The content of the preset memory of ROM is shown in Table 4. With these 14 transponders, the audio subcarrier frequencies, IF bands and stereo modes are set automatically by adjusting the SATELLITE NO. and TRANSPONDER NO.

2. RAM preset

Stereo programs are transmitted in transponders other than those shown in Table 4. The RAM preset memory treats them with memory for 12 transponders. For storage, first adjust the reception conditions with key operations, then simply press the MEMORY key for approx. 1 sec. To clear

the memory preset, press the CLEAR key for 1 sec. (For details, see page 9.) Refer to a program list available in stores and, for stereo programs that are not stored in the ROM preset, store the conditions in this preset.

Note:

Multiplex (MPX) stereo programs is transmitted in Tr No. 2 of SAT-COM 4. However, as the MONO/STEREO switching of MPX programs is performed by detecting the pilot signal, preset operation is not necessary. For convenience, it is recommended to input Table 4 with the memory content you have stored.

3. SKEW memory

Strictly speaking, SKEW adjustment is necessary for each satellite. For each of the 16 satellites shown in Table 4, this unit has a memory of the last (optimum) setting, so further adjustment is not required. However, as the postures of the satellites are controlled, adjustment could become necessary in the long run. In addition to the satellites shown in Table 4, this unit is compatible with 8 satellites per series, 80 satellites in total. When a new satellite is added, SKEW adjustment is required at each reception because the SKEW memory is provided only for the 16 satellites. Consequently, it is recommended to preset the memory in the position for a satellite which is no longer used in the same series. Even if the series is different, there will be no problem if the transponders of the satellites have the same EVEN H or ODD H.

4. LAST STATE memory

When the power is switched ON, the key settings immediately before the power was last switched off are reproduced.

Battery installation of RC-1000

Open the battery cover and, observing correct (+) and (-) polarity, insert the two size AA (UM-3) batteries. Then replace the battery cover. (bottom panel)

Note:

Battery life is approximately one year. Replace worn out batteries immediately.

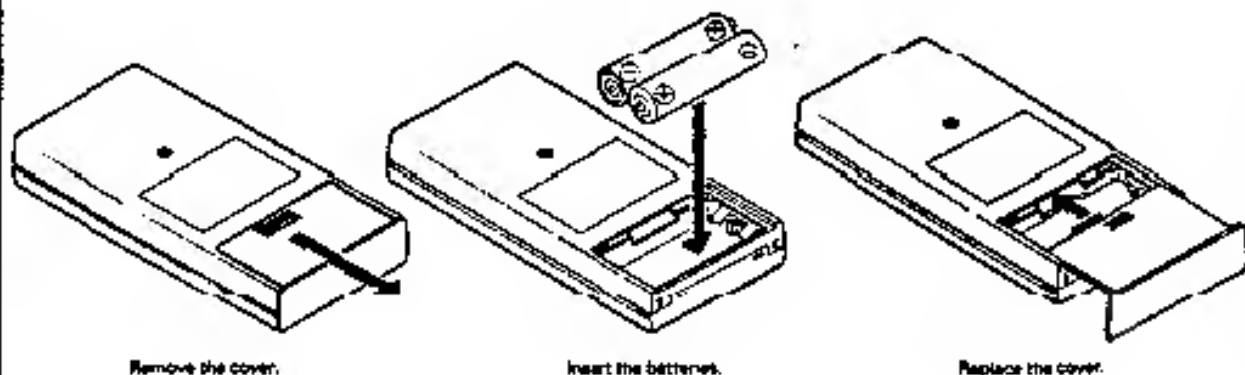


Fig. 3

Secondary key setting

Initial key setting

Table 4. Quick reference of multi mode memory

Frequency Listing											
	1	2	3	4	5	6	7	8	9	0	
	SATCOM	COMSTAR	TELSTAR	WESTAR	GALAXY	SPECNET	OTHER			ANIK	
							A	B	C		
1	1A		1A		1 2 5.58/5.76 NDS 4 5.80/5.80 W MT 14 5.80/5.80 W MT 24 5.80/5.80 W MT	1					
2	2			2							B
3	3R 2 5.58/5.76 NDS 5 5.80/5.80 W MT 7 5.58/5.76 NDS 11 5.80/5.80 W MT	3		3							
4	4 3 5.58/5.76 NDS	4 18 5.58/5.76 NDS		4							D
5	5			5 10 5.80/5.80 W MT 12 5.80/5.80 W MT 17 5.58/5.76 NDS 23 5.58/5.76 NDS							
6											
7											
8											

It is not possible to store 9 and 0 in memory.

Audio subcarrier freq.: A/B MHz

(MATRIX: A=L-R R=L+R)
(DISCRETE: A=L, B=R)

IF band: W= WIDE N= NARROW

Stereo mode: MT= MATRIX, DS= DISCRETE

Operating instructions

1. Preparation

- (1) Press the SCAN key to search the satellite signal. When the SCAN key is pressed, scanning in the increasing direction of TR. NO. starts at a high speed of 1.5 seconds/24 stations. While scanning, move the antenna for satellite reception. When the satellite television is received, the screen condition momentarily changes. At this point, stop moving the antenna and stop scanning by pressing the SCAN key or pressing any other operation key. Turn the TRANSPONDER control to obtain a picture on the screen. Specify the received program referring to the commercially available satellite television program list and Table 4.
- (2) Input the received satellite program in the satellite antenna positioner.
The optional satellite antenna positioner KSP-1000 can preset up to 18 antenna positions for satellite. For details, refer to the instruction manual of KSP-1000.

2. Selecting the satellite

- (1) As shown in Table 4, when [1] (SATCOM) and [3] keys of the satellite selection keys are pressed in that order, the SAT. NO. display shows 13 indicating that the SATCOM F3 is selected. With ANIK B and D, first press [0], then [2] for B or [4] for D.
- (2) When KSP-1000 is used in combination with the unit, the satellite selection in step (1) above is transmitted to KSP-1000 and the antenna moves to the preset position for the selected satellite.
- (3) When the satellite is selected, the horizontal/vertical switching of the polarizer probe for the TR. NO. is automatically performed.

3. Selecting the transponder

- (1) Turn the TRANSPONDER control to select the transponder. A beep sound is heard every time the control is adjusted to a transponder.
- (2) As shown in Table 4, when a transponder in stereo is selected, the unit automatically enters stereo mode as the stereo mode (M/MPX, MATRIX, DISC) audio IF band (wide, narrow) and audio subcarrier frequencies (32 stations for each of A and B channels) are all memorized in the unit ROM.

4. To memorize new satellite programs

Additional memorization of new satellite to an area where no satellite program is registered in Table 4 is possible. For example, satellites 6, 7 and 8 can be added to the memory of SATCOM, and antennas 1, 2, 5, 6, 7, 9 can be added to COMSTAR. For new satellites, use the OTHER A - C keys. The KSP-1000 satellite antenna positioner memory capacity is up to 18 antenna positions, and selection of satellites not preset in the KSP-1000 memory is not possible (ERROR indicator lights in the display).

5. To add new stereo programs

In addition to the ROM pre-set specified in Table 4, the unit has RAM pre-set for new stereo programs. Up to 12 stereo programs can be added to the memory.

- (1) Recall the SAT. NO. and the TR. NO. of the stereo program to be added in the memory using the satellite selection keys and the TRANSPONDER control.

- (2) Set the MODE key to the appropriate position according to the stereo mode of the program. Select IF band of the program with the BAND (W/N) key.
- (3) Tune in to the program frequencies with the TUNING (4/8) keys. For example, when the program to be added in the memory has the frequency 5.58/6.88 MHz, set A channel to 5.58 MHz and B channel to 6.88 MHz. A/B channel setting can be selected by the CHANNEL (A/B) key and the selected channel is indicated in the display. The unit's audio subcarrier frequencies are synthesizer type and the frequency of A and B channels is specified in Table 5.

5.04	5.58	5.94	6.80	6.66	7.20	7.74	8.10
5.22	5.76	6.12	6.44	6.80	7.38	7.76	8.14
5.40	5.80	6.17	6.48	6.84	7.56	7.92	8.28
5.43	5.88	6.20	6.62	7.02	7.70	8.06	8.48

Table 5

- (4) Press the MEMORY key. When the MEMORY key is pressed, the beep sound is heard from the speakers and the display momentarily flashes. Monaural programs cannot be memorized.

Notes:

Be sure to keep the MEMORY key pressed for more than 1 second. Otherwise, the MEMORY key is not activated.

6. To clear the content of RAM preset

Tune in the TR. No. to be cleared, then pressed the CLEAR key for 1 second or more. A beep sounds, the display flashes and the memory is cleared.

Notes:

The display content does not change even after the clear operation. Once another TR. NO. is received, the display changes to the current content after clear.

7. In case of RAM pre-set capacity overflow

- (1) Immediately turn in or the transponder to be memorized to stereo mode.
- (2) When the MEMORY key is pressed with 12 stations already preset, the transponder received in step (1) above is not memorized and the audio frequency display flashes for about 5 seconds indicating that the memory capacity is full.
- (3) To memorize the station received in step (1) above, one station already preset should be cleared. When the MEMORY key is pressed while the audio frequency display is flashing, the SAT. NO. and the TR. NO. are indicated in the order pressed every time the MEMORY key is pressed. (The screen shows the station received in step (1).)
- (4) Receive the station to be cleared from the memory. Press the CLEAR key. The beep sound is heard, the display momentarily flashes and returns to normal display.
- (5) Receive the station to be added to the memory again and press the MEMORY key. The station appearing on the screen (station received in step (1) above) is memorized.

8. To modify the content of ROM preset

8-1 To modify the mode and frequency while staying in stereo

As the RAM preset has priority in the same transponder, modify by inputting into the RAM preset, following the method shown in 5 above.

8-2 To modify for monaural

When a stereo movie is changed to a monaural for some reason, the unit should also be set to monaural mode using the MODE key.

The following procedure is to fix the unit to monaural mode and is very useful for frequent tuning in to a monaural station.

- (1) Set the MODE key to DISC. Set the audio frequency to 6.8 MHz for both A and B channel settings (in some areas, the required frequency may be 6.2 MHz or 5.8 MHz).
- (2) Press the MEMORY key for about 1 second to memorize the mode and frequency set in step (1) above.

9. SKEW (CCW, CW) adjustment

SKEW adjustment is to adjust the mechanical type polarizer probe according to the vertical or horizontal oscillation of the signals from the satellite. The oscillation direction varies according to each satellite, and may vary according to the time received even for one satellite. SKEW adjustment is performed by the SKEW (CCW, CW) key. The adjustment for the satellites specified in Table 4 is memorized every time the adjustment is performed.

The adjustment for the satellites not specified in Table 4 is not memorized, and therefore, should be performed every time the satellite is received.

10. PARENTAL LOCK system

The unit PARENTAL LOCK system makes it impossible for children to view adult programs or to play with the antenna when the unit is used in combination with the satellite antenna positioner KSP-1000. Up to 2 channels can be locked with the PARENTAL LOCK system.

- (1) Tune in to the transponder to be locked and press the PARENTAL LOCK key for more than 1 second. # mark

in the display flashes, the picture is extinguished and sound muted. The satellite selection keys are also locked and the KSP-1000 cannot be operated.

- (2) When another transponder is selected, that transponder can be received. However, the # mark in the display remains lit to indicate that there is a transponder locked.
- (3) Another channel can be locked with the same operation described in steps (1) and (2).
- (4) Once the PARENTAL LOCK is released, it is necessary to perform the PARENTAL LOCK procedure once again to lock the required program.

11. Releasing the PARENTAL LOCK

Release of the PARENTAL LOCK system is performed using the code No. For more complicated release procedure, the code No. can be changed. The PARENTAL LOCK system can also be released even when the code No. is forgotten. For details of the release procedure, see the last page of this instruction manual. Detach this page and keep it out of reach of children.

12. Remote controller unit

The operations of the unit except for special operations such as SKEW and SCAN can be remotely controlled by the supplied remote controller. Note that the < key and > key on the remote controller are the equivalents to the TRANS-POUNDER control on the main unit.

Notes on remote control operation

- The batteries for the remote controller are not supplied. Before operating the remote controller, install 2 penlight AA (UM-3, AM-3) batteries in the remote controller.
- The remote controller is infrared ray type, and can be used in the range of 30 feet 90". Be sure not to place obstacles between the remote controller and the main unit.
- Remove the batteries when the remote controller is not to be used for a long period of time.
- Remote control operation takes a little longer than main unit operation. Operate the remote controller slowly.

In case of difficulty

In case of malfunction, first check the items shown in the table below. If the malfunction persists, consult the dealer from whom you purchased this unit. (The table is sent separately.)

Symptom	Cause	Remedy
○ Pressing the POWER switch does not switch the power on.	120VAC may not be input.	1. Insert the AC plug securely into an AC outlet.
○ No key operation is accepted.		1. Disconnect the AC plug and reconnect.
○ Power is switched on, but no picture or sound.	Cords may be disconnected.	1. Check the connections on the rear panel: (a) Between ANTENNA DATA OUT and KSP-1000 (coaxial cable) (b) Between IF IN and LNB (coaxial cable) (c) Between TV RF OUT and TV (VHF ANT terminal)
	PARENTAL LOCK may be activated.	1. Release PARENTAL LOCK.
	TV channel setting may be incorrect.	1. Set to CH3 or CH4.
	Switch settings may be incorrect.	1. Specify and confirm the satellite and channel using SATELLITE and TRANSPONDER. 2. Check SKEW adjustment. 3. Select the audio frequency using TUNING control.
○ Abnormal picture.	VIDEO POLARITY switch setting may be reverse.	1. Switch for normal picture.
	Scramble may be activated.	1. Scramble is activated to prevent the public viewing the program, so it is not a malfunction.

Symptom	Cause	Remedy
○ Picture with no sound.	OUTPUT LEVEL may be set to minimum.	1. Increase the control for optimum volume.
	Audio frequency may be set incorrectly.	1. Specify the audio frequency using TUNING control.
	Connection at AUDIO OUT may be defective.	Connect securely between AUDIO OUT and amplifier.
○ Audiomode is not in stereo.	MODE may be set incorrectly.	1. On the program list, check the stereo mode, audio frequency and tuning time.
	Audio frequency may be set incorrectly.	
	The program may not be stored.	
○ Sound is distorted.	BAND may be set incorrectly.	1. On the program list, check the band and frequency. When the mode is mono, set to WIDE.
	Audio frequency may be set incorrectly.	
○ Noise in picture and sound.	Antenna position may be incorrect.	1. Set to the optimum position using the positioner (e.g. KSP-1000).
	POWER may be set incorrectly.	1. Adjust POWER.
	LNB wiring connection may be defective.	1. Check the connection between IF IN and LNB.
	The cover lid of the tuning box may be left open.	1. Close the tuning box cover securely. (rear panel)
○ Some front panel operation keys are ineffective.	PARENTAL LOCK may be activated.	1. Release PARENTAL LOCK.
○ Memory storage is not possible.	Mode may be set to M/MPX.	1. Memory storage is not possible in M/MPX mode.
	The time of pressing may be too short.	1. Press the key until the beep sound is heard.
○ Memory cannot be cleared.	Microprocessor's ROM cannot be cleared.	1. It is not possible to clear the channels shown in Table 4 of the instruction manual.
	The time of pressing may be too short.	1. Press the key until the beep sound is heard.
○ Remote control is not effective.	The batteries may be exhausted.	1. Replace with new batteries.

Notes

This unit contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, unplug the power cord, then plug it in again and check the functions.

IF INPUT frequency.....	950 - 1450 MHz + DC 21V (280 mA max.) F type
IF INPUT level.....	-80 dBm ~ -30 dBm
Video output.....	1 V _{p-p} ; RCA type
TV RF output.....	86.5 dB μ ; F type
Antenna input.....	(80 dB isolation); F type
Audio output (STEREO).....	0 ~ 1.2Vrms; RCA type
Audio output (MONO).....	0.6 Vrms; RCA type
Electric power output.....	3V at 30 mA
Mechanical polarizer output.....	+5V (400 mA peak) Pulse width: 0.4 ~ 3m sec.
Power consumption.....	45 W
AC outlet x 1.....	200 W max.
Memory backup.....	Approx. 10 years.
Accessories.....	Remote controller RC-1000 x 1 (Batteries: Penlight AA x 2, not supplied)
Dimensions (W x H x D).....	Main unit: (WxHxD) 440 x 86 x 330 mm (17-5/16" x 3-3/8" x 13") Remote controller: 135 x 62 x 18 mm (5-5/16" x 2-7/16" x 5/8")
Weight (Net).....	Main unit: 5.6 kg (12.3 lb) Remote controller: 66 g (Excluding batteries)

KENWOOD



Release of the PARENTAL LOCK system

1. Normal release procedure

Input 9999 with the satellite selection keys. The PARENTAL LOCK system is released. (9999 is not indicated in the display at this time.) Inputting any number ending with 9999 also releases the PARENTAL LOCK system.

2. Registration of the code No.

Using the code No. is also possible for a more sophisticated release procedure of the PARENTAL LOCK system.

- (1) Release the PARENTAL LOCK system if it is activated.
- (2) Press the PARENTAL LOCK key twice within 1 second. The SAT. NO. and the TR. NO. displays are cleared from the display and the [P] mark flashes to indicate that the unit is standing by for the code No. registration.
- (3) Input 9999 with the satellite selection keys. The SAT. NO. and the TR. NO. display shows 9999 and the [P] mark lights. The displayed number 9999 goes out when the [P] mark indicator starts to flash.
- (4) Input the 4-digit number for the code No. using the satellite selection keys. The input number is indicated in the display.
- (5) Press the PARENTAL LOCK key. The display returns to normal display and the input number is registered as the code No. for the release of the PARENTAL LOCK system.

Note:

At this time, be sure to press the PARENTAL LOCK key momentarily. When the key is pressed for more than 1 sec., the registration may not be possible.

3. Release of PARENTAL LOCK system using the code No.

Inputting the preset code No. using the satellite selection keys releases the PARENTAL LOCK system. Inputting 9999 also releases the lock.

4. Changing the code No.

- (1) Release the PARENTAL LOCK system if it is activated.
- (2) Press the PARENTAL LOCK key twice within 1 second.
- (3) Input the original code No. using the satellite selection keys.
- (4) Input the new 4-digit code No. using the satellite selection keys.
- (5) Press the PARENTAL LOCK key to memorize the new code No.

5. In case of forgetting the code No.

If you forget the registered code No., release the PARENTAL LOCK system by performing the following procedure:

- (1) Disconnect the AC cord.
- (2) Plug in the AC cord with the POWER ON/OFF key pressed.
- (3) Input 9999 with the satellite selection keys. The PARENTAL LOCK system is released.